

CLAIMS

What is claimed is:

1. A transportable container for nuclear fuel comprising:
an outer container bounding an interior and defining an overall volume;
a thermal insulation material disposed within the interior bounded by the outer container, the thermal insulation material bounding an internal cavity;
four or more sleeves disposed within the cavity; and
one or more fuel containers received within at least one of the sleeves, each of the one or more fuel containers having an internal volume and a releasable lid, the sum of the internal volumes of the one or more fuel containers being at least 5% of the overall volume of the outer container.
2. A container according to claim 1 in which the sleeves are surrounded by a neutron absorbing material, the neutron absorbing material filling the internal cavity apart from the inside of the sleeves.
3. A container according to claim 1 in which the volume of the internal cavity outside of the sleeves is filled by neutron absorbing material or neutron absorbing material which incorporates lower density materials.
4. A container according to claim 1 in which the sleeves are rigidly separated from one another.

5. A container according to claim 1 in which the outer container is comprised of steel, the sleeves are comprised of stainless steel and have a substantially circular transverse cross-section, the sleeves having an internal diameter that is substantially equal to an external diameter of the fuel containers, the sleeves being rigidly separated from one another, the sleeves being surrounded around their entire circumference by a neutron absorbing material, the fuel containers being comprised of stainless steel having a substantially cylindrical configuration, and nuclear fuel being disposed within the fuel containers in plastic bags.

6. A container according to claim 1 in which the outer container is provided with a lid.

7. A container according to claim 1 in which only one fuel container is provided in each sleeve.

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8. A transportable container for nuclear fuel comprising:

an outer container bounding an interior and defining an overall volume;

a thermal insulation material disposed within the interior bounded by the outer container, the thermal insulation material comprising one or more base layers and one or more wall layers; and

a plurality of chambers being provided within bounds defined by the thermal insulation material, one or more fuel containers being provided within each of a plurality of the chambers, the sum of the internal volumes of the fuel containers being at least 5% of the overall volume defined by the outer container.

9. A container according to claim 8 in which the chambers are surrounded by a neutron absorbing material, the neutron absorbing material filling the bounds defined by the insulation apart from the inside of the chambers.

10. A container according to claim 8 in which neutron absorbing material or neutron absorbing material which incorporates lower density materials fills the volume around the sleeves.

11. A container according to claim 8 in which the internal bounds of the thermal insulation material contact a neutron absorbing material.

12. A container according to claim 8 in which the internal insulation is neutron absorbing.

13. A container according to claim 12 in which the interior bounds of the neutron absorbing insulation contact a neutron absorbing material.

14. A container according to claim 12 in which the neutron absorbing material is loaded with boron.

15. A container according to claim 8 in which the outer container is comprised of steel, the sleeves are comprised of stainless steel and have a substantially circular transverse cross-section, the sleeves having an internal diameter that is substantially equal to an external diameter of the fuel containers, the sleeves being rigidly separated from one another, the sleeves being surrounded around their entire circumference by a neutron absorbing material, the fuel containers being comprised of stainless steel having a substantially cylindrical configuration, and nuclear fuel being disposed within the fuel containers in plastic bags.

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16. A transportable container for nuclear fuel, the container comprising:

an outer container, the outer container being provided with a thermal insulation material disposed therein;

a plurality of laterally spaced apart sleeves provided within the outer container; and

one or more fuel containers received within the one or more of the sleeves, the fuel containers each being provided with a releasable lid for the fuel container, the outer container being provided with a releasable lid for the outer container.

17. A container according to claim 16 in which the releasable lid for the fuel container seals the fuel container when fastened and the releasable lid for the outer container seals the outer container when fastened.

18. A container according to claim 16 in which the outer container and outer container lid provides a first barrier and the fuel container and fuel container lid provides a second barrier between the nuclear fuel and the exterior of the outer container.

19. A transportable container for nuclear fuel, the container comprising:

an outer container defined by outer container walls, the outer container being provided with a thermal insulation material disposed therein;

a plurality of laterally spaced apart sleeves provided within the outer container;

nuclear fuel provided within the sleeves in use, wherein there is provided between the nuclear fuel within the sleeves and an outer container wall of the outer container at least some of the thermal insulation material and a neutron absorbing material.

20. A container according to claim 19 in which a material of lower density than the neutron absorbing material is also provided between a side wall of a sleeve and an outer container wall.

21. A container according to claim 19 in which the neutron absorbing material is fire resistant.

22. A transportable container for nuclear fuel, in which:

the nuclear fuel is uranium oxide and the fuel is contained within a first container;

one or more first containers are contained within a fuel container;

each fuel container is received within a sleeve;

the sleeves are laterally spaced apart from one another within a cavity;

the cavity is provided with a thermal insulation material;

the thermal insulation material is disposed within an outer container; and

the outer container contains both the fuel containers and the first containers.

23. A container according to claim 22 in which the first container is a plastic bag.